

**THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appellant(s): Daouse et al.
Appl. No.: 10/599,311
Conf. No.: 6771
Filed: September 25, 2006
Title: PROCESS FOR PREPARING, PRIOR TO FILLING, A WAFER CORNET,
CORNET THUS OBTAINED AND INSTALLATION FOR IMPLEMENTING
THE PROCESS
Art Unit: 1794
Examiner: Jerry W. Anderson
Docket No.: 3712036-00754

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' APPEAL BRIEF

Sir:

Appellants submit this Appeal Brief in support of the Notice of Appeal filed on November 23, 2010. This Appeal is taken from the Final Rejection dated May 25, 2010.

I. REAL PARTY IN INTEREST

The real party in interest for the above-identified patent application on Appeal is Nestec S.A. by virtue of an Assignment dated November 13, 2006 and recorded at reel 018519, frame 0640 in the United States Patent and Trademark Office.

II. RELATED APPEALS AND INTERFERENCES

Appellants' legal representative and the Assignee of the above-identified patent application do not know of any prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision with respect to the above-identified Appeal.

III. STATUS OF CLAIMS

Claims 24, 26-30 and 44 are pending in the above-identified patent application. Claims 24, 26-30 and 44 stand rejected. Therefore, Claims 24, 26-30 and 44 are being appealed in this Brief. A copy of the appealed claims is included in the Claims Appendix.

IV. STATUS OF AMENDMENTS

A non-final Office Action was mailed on November 4, 2009, in which the Examiner rejected Claims 24 and 44 under 35 U.S.C. §112, second paragraph, and Claims 24-30 and 44 under 35 U.S.C. §103. Appellants filed a Response to the non-final Office Action on February 19, 2010, in which Appellants amended the claims and argued against the indefiniteness and obviousness rejections. Appellants filed a Notice of Appeal on November 23, 2010. Copies of the non-final Office Action, and final Office Action are included in the Evidence Appendix as Exhibits A and B, respectively.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A summary of the invention by way of reference to the specification and/or figures for each of the independent claims is provided as follows:

Independent Claim 24 is directed to a process for preparing a container comprising a wafer and having a wall extending between an outwardly open mouth zone and a narrower zone forming an outward end, the container being arranged such that the closed, narrow end of the wafer forms the bottom tip of the container (page 3, lines 1-28), the process comprising, prior to a filling of the container with a food product (page 3, lines 1-28), the steps of: spraying the inner wall of the container with a liquid coating agent that is capable of solidifying rapidly in order to form a coating layer intended (page 3, lines 1-28), after the food product has been placed in the container (page 3, lines 1-28), to separate the wafer and the food product (page 3, lines 1-28), the coating layer being provided in order, subsequently, to be consumed at the same time as the wafer and the food product (page 3, lines 1-28), the inside of the container being sprayed with an excess quantity of coating agent (page 3, lines 1-28), the excess quantity being sufficient to prevent a coating-gap zone on the inner wall of the wafer that is to come into contact with the food product (page 3, lines 1-28); allowing excess liquid coating agent to collect, under gravity, at the bottom tip of the container (page 3, lines 1-28); removing, prior to the solidification the excess liquid coating agent (page 3, lines 1-28); recycling the excess coating agent to a supply for spraying the inside of the container, the excess coating agent being removed via a pipette positioned close to the bottom tip of the container, an end of the pipette including at least one suction orifice (page 3, line 30-page 4, line 24); and after suction, supplying the orifice with a gaseous flow in order to expel any possible clogging particles that might remain therein (page 3, line 30-page 4, line 24), wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent (page 3, line 30-page 4, line 24).

Independent Claim 44 is directed to a process comprising the steps of prior to filling of a container consisting of a wafer with a food product, spraying an inner wall of the container with a liquid coating agent (page 3, lines 1-28), the coating agent being capable of solidifying rapidly in order to form a coating layer to separate the wafer and the food product in the container (page 3, lines 1-28), the inside of the container being sprayed with an excess quantity of coating agent

(page 3, lines 1-28) to prevent a coating-gap zone on the inner wall of the wafer that comes into contact with the food product (page 3, lines 1-28), the excess liquid coating agent collecting, under gravity, at a bottom tip of the container (page 3, lines 1-28), and prior to the solidification of the excess, the excess is suctioned out of the container and recycled to the supply for spraying the inside of the container (page 3, lines 1-28), the coating agent being suctioned out using a pipette positioned close to a bottom tip of the container (page 3, line 30-page 4, line 24), an end of the pipette including at least one suction orifice (page 3, line 30-page 4, line 24), and after suction, the orifice is supplied with a gaseous flow in order to expel any particles from the orifice (page 3, line 30-page 4, line 24), wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent (page 3, line 30-page 4, line 24).

Although specification citations are given in accordance with C.F.R. 1.192(c), these reference numerals and citations are merely examples of where support may be found in the specification for the terms used in this section of the Brief. There is no intention to suggest in any way that the terms of the claims are limited to the examples in the specification. As demonstrated by the references numerals and citations below, the claims are fully supported by the specification as required by law. However, it is improper under the law to read limitations from the specification into the claims. Pointing out specification support for the claim terminology as is done here to comply with rule 1.192(c) does not in any way limit the scope of the claims to those examples from which they find support. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, the references numerals and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 24, 26-30 and 44 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,171,367 to Carter et al. ("*Carter*") in view of U.S. Patent No. 2,670,696 to Covert et al. ("*Covert*") and further in view of U.S. Patent No. 3,552,212 to Ohlin ("*Ohlin*"). Copies of *Carter*, *Covert* and *Ohlin* are included in the Evidence Appendix as Exhibits C, D and E, respectively.

VII. ARGUMENT

A. LEGAL STANDARDS

Obviousness under 35 U.S.C. § 103

The Federal Circuit has held that the legal determination of an obviousness rejection under 35 U.S.C. § 103 is:

whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made...The foundational facts for the *prima facie* case of obviousness are: (1) the scope and content of the prior art; (2) the difference between the prior art and the claimed invention; and (3) the level of ordinary skill in the art...Moreover, objective indicia such as commercial success and long felt need are relevant to the determination of obviousness...Thus, each obviousness determination rests on its own facts.

In re Mayne, 41 U.S.P.Q. 2d 1451, 1453 (Fed. Cir. 1997).

In making this determination, the Patent Office has the initial burden of proving a *prima facie* case of obviousness. *In re Rijckaert*, 28 U.S.P.Q. 2d 1955, 1956 (Fed. Cir. 1993). This burden may only be overcome “by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings.” *In re Fine*, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). “If the examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent.” *In re Oetiker*, 24 U.S.P.Q. 2d 1443, 1444 (Fed. Cir. 1992).

Moreover, the Patent Office must provide explicit reasons why the claimed invention is obvious in view of the prior art. The Supreme Court has emphasized that when formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. *KSR v. Teleflex*, 127 S. Ct. 1727 (2007).

Of course, references must be considered as a whole and those portions teaching against or away from the claimed invention must be considered. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc.*, 796 F.2d 443 (Fed. Cir. 1986). “A prior art reference may be considered to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the

path that was taken by the Applicant.” *Monarch Knitting Machinery Corp. v. Fukuhara Industrial Trading Co., Ltd.*, 139 F.3d 1009 (Fed. Cir. 1998), quoting, *In re Gurley*, 27 F.3d 551 (Fed. Cir. 1994).

B. THE CLAIMED INVENTION

Independent Claim 24 is directed to a process for preparing a container including a wafer and having a wall extending between an outwardly open mouth zone and a narrower zone forming an outward end. The container is arranged such that the closed, narrow end of the wafer forms the bottom tip of the container. The process includes, prior to a filling of the container with a food product, the steps of spraying the inner wall of the container with a liquid coating agent that is capable of solidifying rapidly in order to form a coating layer intended, after the food product has been placed in the container, to separate the wafer and the food product. The coating layer is provided in order, subsequently, to be consumed at the same time as the wafer and the food product. The inside of the container is sprayed with an excess quantity of coating agent. The excess quantity is sufficient to prevent a coating-gap zone on the inner wall of the wafer that is to come into contact with the food product. The process further includes the steps of allowing excess liquid coating agent to collect, under gravity, at the bottom tip of the container, removing, prior to the solidification the excess liquid coating agent, and recycling the excess coating agent to a supply for spraying the inside of the container. The excess coating agent is removed with a pipette positioned close to the bottom tip of the container. An end of the pipette includes at least one suction orifice. After suction, an orifice is supplied with a gaseous flow in order to expel any possible clogging particles that might remain therein. The gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

Independent Claim 44 is directed to a process including the steps of, prior to filling of a container consisting of a wafer with a food product, spraying an inner wall of the container with a liquid coating agent. The coating agent is capable of solidifying rapidly in order to form a coating layer to separate the wafer and the food product in the container. The inside of the container is sprayed with an excess quantity of coating agent to prevent a coating-gap zone on the inner wall of the wafer that comes into contact with the food product. The excess liquid

coating agent collecting, under gravity, at a bottom tip of the container. Prior to the solidification of the excess, the excess is suctioned out of the container and recycled to the supply for spraying the inside of the container. The coating agent is suctioned out using a pipette positioned close to a bottom tip of the container. An end of the pipette includes at least one suction orifice. After suction, the orifice is supplied with a gaseous flow in order to expel any particles from the orifice, wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

C. THE REJECTION OF CLAIMS 24, 26-30 AND 44 UNDER 35 U.S.C. §103(a) SHOULD BE REVERSED BECAUSE THE EXAMINER HAS FAILED TO ESTABLISH A PRIMA FACIE CASE OF OBVIOUSNESS

Appellants respectfully request that the Board reverse the rejection of Claims 24, 26-30 and 44 under 35 U.S.C. §103(a) because the Examiner has failed to establish a *prima facie* case of obviousness. In this regard, Appellants submit that the cited references fail to disclose or suggest each and every element of the present claims and that the skilled artisan would have no reason to combine the cited references to arrive at the present claims.

1. The Presently Claimed Processes and Advantages of Same

Independent Claims 24 and 44 recite, in part, processes comprising spraying an inner wall of a container with a liquid coating agent, the inside of the container being sprayed with an excess quantity of coating agent, the excess quantity being sufficient to prevent a coating-gap zone on the inner wall of the wafer that is to come into contact with the food product; allowing excess liquid coating agent to collect, under gravity, at the bottom tip of the container; removing the excess liquid coating agent, recycling the excess coating agent to a supply for spraying the inside of the container, the excess coating agent being removed via a pipette, an end of the pipette including at least one suction orifice, and after suction, supplying the orifice with a gaseous flow in order to expel any possible clogging particles that might remain therein, wherein

the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

It is imperative in manufacturing ice-cream filled cornet wafers to maintain the desirable crunchy nature of the wafer by protecting the wafer from contacting the ice cream. See, specification, page 1, line 12-page 2, line 16. Conventional methods of addressing this problem have simply sprayed an excess amount of chocolate coating agent on the inner wall of the wafer to form a barrier between the wafer and the ice cream. See, specification, page 1, line 12-page 2, line 16. However, although the spraying of excess coating agent prevents a gap from forming in the chocolate layer, it results in an excess quantity of chocolate accumulated at the bottom tip of the cone, thereby making the cone undesirable to consumers. See, specification, page 1, line 12-page 2, line 16.

The present claims provide a method in which the inside of the container is sprayed with an excess quantity of coating agent compared with that which would be strictly necessary to establish a continuous layer over the inner wall of the wafer, and prior to the solidification the excess liquid coating agent is removed via a pipette positioned close to the bottom tip of the container and is recycled for spraying another container. By removing the excess coating agent via a pipette and recycling the excess coating agent to a supply for spraying the inside of another container, the present claims reduce the cost associated with using excess coating agent and eliminate consumer dissatisfaction associated with excess coating agent in the bottom of the cone. See, specification, page 2, lines 18-37. In contrast, Appellants respectfully submit that the cited references are deficient with respect to the present claims.

2. The Cited References Fail to Disclose or Suggest Each and Every Element of the Present Claims

Even if combinable, the cited references fail to disclose or suggest wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent as required, in part, by independent Claims 24 and 44. Indeed, the Examiner admits that both *Carter* and *Covert* fail to disclose "back flushing the nozzle" and instead relies on *Ohlin* for disclosure of expelling particles in the orifice using a gaseous flow. See, non-final Office Action, page 5, lines 7-21.

However, *Ohlin* is entirely directed to a device for cleaning the outer surface of a take-off tube that uses suction (e.g., negative pressure) to flow around the take-off tube in a bore to remove any deposits on the outer surface. See, *Ohlin*, Abstract. Specifically, “[a] suction source . . . is connected to an intermediate enlarged portion 28 of the bore 26 through a conduit 29 and a passage 30 in the collar.” See, *Ohlin*, column 2, line 72-column 3, line 3. Further, “[w]hen the probe 18 is withdrawn from the sample tube 15 as shown in FIGS. 2 and 3, a film of wash-liquid is drawn from the recess 31 through the annular space 27 and around the probe portion 19 to the suction conduit 29, and simultaneously air is drawn through the lower end of the annular space as indicated by arrows in FIG. 3.” See, *Ohlin*, column 3, lines 10-15 (emphasis added).

Accordingly, it is clear that the air flow of *Ohlin*, which is sucked through suction conduit 29 by negative pressure, is not in a direction that is the same as a passage direction of the flow of recycled agent as is required, in part, by the present claims. Instead, it is clear that the recycle flow direction of *Ohlin* is in an upward direction while the gaseous flow direction of *Ohlin* is perpendicular to the recycle flow direction and is in a substantially horizontal direction. This is in direct contrast to the present claims that require, in part, a positive pressure gaseous flow to be blown through it so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

The cited references also fail to disclose the inside of the container being sprayed with an excess quantity of coating agent as recited, in part, by independent Claims 24 and 44. The Examiner admits that *Carter* fails to disclose an excess quantity of coating agent and instead asserts that *Covert* discloses the use of excess chocolate. See, non-final Office Action, page 5, lines 1-9 and 21-22. However, the portion of *Covert* relied on by the Examiner merely discloses that molds have been “filled” with chocolate, not that they have been “sprayed” with an excess quantity of chocolate. See, *Covert*, column 1, lines 41-47. When describing its suction removal of chocolate from molds, *Covert* states that “multiple cavity molds 7, which have been previously filled in a depositing machine, are carried by a conveyor 8 into position beneath suction nozzles 9.” See, *Covert*, column 1, lines 42-45. This difference is significant because if the entire ice cream cone were completely filled with liquid chocolate, rather than spraying the chocolate only on the inner wall of the cone, the ice cream cone would immediately soften and lose its crispiness. Nowhere does *Covert* disclose or even suggest that its molds are “sprayed”

with an excess quantity of chocolate, nor does the Examiner cite support for such claimed element.

For at least the above-mentioned reasons, Appellants respectfully submit that the cited references fail to disclose or suggest each and every element of the present claims.

Accordingly, Appellants respectfully request that the rejection of Claims 24, 26-30 and 44 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

3. The Skilled Artisan Would Have no Reason to Combine the Cited References to Arrive at the Present Claims

Furthermore, Appellants respectfully submit that one of ordinary skill in the art would have no reason to combine *Carter* and *Covert* because they are directed to different problems in different fields of endeavor. *Carter* is entirely directed to spraying a chocolate coating on the interior of an ice cream cone immediately before the cone is filled with ice cream. See, *Carter*, column 1, lines 56-60; column 2, lines 5-7. *Carter* teaches that “saving of the chocolate coating material is effected because it is not necessary to provide a large quantity in accordance with the method of the present invention since sufficient time is not permitted for the absorption of an unnecessary and excessive amount of chocolate into the pores of the cones.” See, *Carter*, column 2, lines 17-22. Therefore, it is apparent that no excess chocolate is generated in the ice cream cone production process of *Carter* and *Carter* is completely unconcerned with the removal of excess chocolate in the bottom of its cone.

The Examiner states that “*Carter* is referring to the prior art’s coating of both the outside and inside of the cone” when *Carter* states that “a large quantity of chocolate was not necessary. See, final Office Action, page 8, lines 5-10. Appellants respectfully disagree and submit that *Carter* expressly states that “[t]he chocolate coating in accordance with this invention may also be applied to the interior of a container without a pastry cone therein.” See, *Carter*, column 2, lines 30-33. In contrast to the Examiner’s statement that “*Carter* is referring to the prior art’s coating of both the outside and inside of the cone,” it is clear that *Carter* discusses the disadvantages of the prior art using a coating on both sides of the cone, and states that a “saving of the chocolate coating material is effected” when the coating is not applied to both sides. As such, *Carter* limits use of chocolate for coating purposes.

In contrast to *Carter*, *Covert* is entirely directed to suction removal of an excess quantity of chocolate in a mold during the manufacture of chocolate shells for filled candies. See, *Covert*, column 1, lines 1-13. *Covert* states that “it is a purpose of the invention to eliminate the need for inverting the molds to pour off excess chocolate and then to scrape the mold faces clear of spilled chocolate.” See, *Covert*, column 1, lines 6-9. Because *Covert* involves the manufacture of filled candy chocolate shells in molds, *Covert* is entirely unconcerned with the problems related to an excess quantity of chocolate in a consumable ice cream cone. As such, one of ordinary skill in the art would have no reason to combine the ice cream cone manufacturing process steps of *Carter* with the suction removal step of *Covert* to arrive at the present claims.

The Examiner asserts that simply because *Carter* and *Covert* are both directed to “the preparation of chocolate containing comestibles for human consumption,” that *Carter* and *Covert* are both from the same field of endeavor. See, non-final Office Action, page 9, lines 4-12. However, Appellants note that simply because the references are allegedly related to preparation of chocolate comestibles, the skilled artisan would appreciate that there are numerous methods that may be used for the preparation of chocolate containing comestibles in general, not to mention the numerous methods for the preparation of chocolate-containing ice cream products, and the numerous methods for the preparation of chocolate-containing candies. Indeed, the fields of endeavor here are too vast and too different to provide a reason to combine *Carter* and *Covert* to arrive at the present claims.

Additionally, *Ohlin* is entirely related to the cleaning of an exterior of an elongated body. See, *Ohlin*, Abstract. Accordingly, it is clear that *Ohlin* is not directed to the “preparation of chocolate containing comestibles for human consumption,” which the Examiner alleges is the common thread to the cited references. For at least the above-mentioned reasons, Appellants respectfully submit that the skilled artisan would have no reason to combine the cited references to arrive at the present claims.

Accordingly, Appellants respectfully request that the rejection of Claims 24-30 and 44 under 35 U.S.C. §103(a) to *Carter*, *Covert* and *Ohlin* be withdrawn.

VIII. CONCLUSION

Appellants respectfully submit that the Examiner has failed to establish obviousness under 35 U.S.C. §103 with respect to the present claims. Accordingly, Appellants respectfully submit that the obviousness rejections are erroneous in law and in fact and should, therefore, be reversed by this Board.

The Director is authorized to charge \$540 for the Appeal Brief and any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712036-00754 on the account statement.

Respectfully submitted,

K&L GATES LLP

BY 

Robert M. Barrett
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Dated: January 21, 2011

CLAIMS APPENDIX
PENDING CLAIMS ON APPEAL OF
U.S. PATENT APPLICATION SERIAL NO. 10/599,311

24. A process for preparing a container comprising a wafer and having a wall extending between an outwardly open mouth zone and a narrower zone forming an outward end, the container being arranged such that the closed, narrow end of the wafer forms the bottom tip of the container, the process comprising, prior to a filling of the container with a food product, the steps of:

spraying the inner wall of the container with a liquid coating agent that is capable of solidifying rapidly in order to form a coating layer intended, after the food product has been placed in the container, to separate the wafer and the food product, the coating layer being provided in order, subsequently, to be consumed at the same time as the wafer and the food product, the inside of the container being sprayed with an excess quantity of coating agent, the excess quantity being sufficient to prevent a coating-gap zone on the inner wall of the wafer that is to come into contact with the food product;

allowing excess liquid coating agent to collect, under gravity, at the bottom tip of the container;

removing, prior to the solidification the excess liquid coating agent;

recycling the excess coating agent to a supply for spraying the inside of the container, the excess coating agent being removed via a pipette positioned close to the bottom tip of the container, an end of the pipette including at least one suction orifice; and

after suction, supplying the orifice with a gaseous flow in order to expel any possible clogging particles that might remain therein, wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

26. A process according to Claim 24, wherein the suction orifice is located in a vicinity of a base of a pipette that slides in a guide capable of scraping the outer wall of the pipette causing particles of wafer sticking to the outer wall to fall, under gravity, into the container.

27. A process according to Claim 26, wherein the suction orifice is positioned laterally on the pipette, and the guide comprises a chamber for blowing the gaseous flow in order to expel the particles of wafer wedged in the orifice.

28. A process according to Claim 24, wherein the container is a substantially conical cornet.

29. A process according to Claim 24, wherein the coating agent is chocolate.

30. A process according to Claim 24, wherein the food product is an ice-cream.

44. A process comprising the steps of:

prior to filling of a container consisting of a wafer with a food product, spraying an inner wall of the container with a liquid coating agent, the coating agent being capable of solidifying rapidly in order to form a coating layer to separate the wafer and the food product in the container, the inside of the container being sprayed with an excess quantity of coating agent to prevent a coating-gap zone on the inner wall of the wafer that comes into contact with the food product, the excess liquid coating agent collecting, under gravity, at a bottom tip of the container, and prior to the solidification of the excess, the excess is suctioned out of the container and recycled to the supply for spraying the inside of the container, the coating agent being suctioned out using a pipette positioned close to a bottom tip of the container, an end of the pipette including at least one suction orifice, and after suction, the orifice is supplied with a gaseous flow in order to expel any particles from the orifice, wherein the gaseous flow is blown through the suction orifice so that the flow ejects the particles in a direction that is the same as a passage direction of the flow of recycled coating agent.

EVIDENCE APPENDIX

EXHIBIT A: Non-final Office Action dated November 4, 2009

EXHIBIT B: Final Office Action dated May 25, 2010

EXHIBIT C: U.S. Patent No. 3,171,367 to Carter et al. ("*Carter*")

EXHIBIT D: U.S. Patent No. 2,670,696 to Covert et al. ("*Covert*")

EXHIBIT E: U.S. Patent No. 3,552,212 to Ohlin ("*Ohlin*")

RELATED PROCEEDINGS APPENDIX

None.

EXHIBIT A



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.				
10/599,311	09/25/2006	Alain Bernard Daouse	112701-754	6771				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chicago.patents@klgates.com

Office Action Summary	Application No. 10/599,311	Applicant(s) DAOUSE ET AL.	
	Examiner JERRY W. ANDERSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 7/17/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-30 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-30 & 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Examiner acknowledges the receipt of the Applicant's Amendment, mailed 7/17/2009. Claims 24-30 & 44 amended and pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 24 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "excess quantity compared with that which would be strictly necessary to establish a continuous layer over the inner wall of the wafer" in claims 24 and 44 is a relative term which renders the claim indefinite. The term " excess quantity compared with that which would be strictly necessary to establish a continuous layer over the inner wall of the wafer " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1794

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 24-30 and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over Carter, P.H., et al., (3,171,367) in view of Covert, C.J., et al., (2,670,696) and further in view of Ohlin. E.L. (3,552,212)**

8. Carter ('367) discloses:

- a. Conventional ice cream cones, (line 31, col. 1, '367)
- b. The coating on the cones prevents them from becoming soggy when the ice cream is added, (lines 41-43, col.1, '367)
- c. Coating applied to interior of cone, (lines 8-9, col.2, '367)
- d. Deposit coating material . . . cones immediately before ice cream . . . chills and hardens the coating, (lines 2-5, col.2, '367)
- e. Spray . . . covers the inside surface of the pastry cone with a layer of chocolate, (lines 51-53, col.3, '367)
- f. Coating other than chocolate can be used, (lines 37-38, col.4, '367)

9. Covert ('696) discloses:

- g. Molds are filled by depositing machine, (lines 41-42, col.1, '696)
 - h. Nozzle may enter mold substantially to the bottom of the mold cavity,
(lines 6-10, col.2, '696)
 - i. The suction is on when the nozzle meets the surface of the liquid in the
mold cavity, (lines 1-5, col.2, '696)
 - j. The chocolate removed by suction to the tempering kettle . . . supply the
depositing machine, (lines 28-30, col.2, '696)
 - k. The action may be relatively rapid and continuous, . . . high rate of
production, and a uniform, high grade product, (lines 13-15, col.3, '696)
10. Ohlin ('212) discloses:
- l. A collar has a bore slightly larger in diameter than tube is positioned so
that the portion of the tube is cleaned as it passes through bore. (abst. '212)
 - m. Device for cleaning the exterior of an elongated body . . . removing loosely
adhering matter, (lines 27-29, col. 1, '212)
 - n. Tubular probe which is mounted for movement up and down out of and
into successive sample containers for withdrawal of the samples therein, (lines
43-45, col. '212)
 - o. Efficient removal of loosely adhering matter from the exterior of an
elongated member, (lines 61-62, col. 1, '212)
 - p. Effecting an efficient removal of sample residues from the outer surface of
a tubular probe, (lines 63-64, col. 1, '212)

- q. Air may drawn through both ends of the annular space during the downward as well as the upward movement of the probe, (line2 28-30, col. 1, '212)
- r. if the diameter of the bore is too large in relation to the diameter of the probe, the flow of wash-liquid and air may be inadequate to ensure an efficient removal, (lines 37-39, col. 3, '212)
11. Regarding claims 24 and 44, Carter discloses the claimed invention, including, Spray . . . covers the inside surface of the pastry cone with a layer of chocolate, (lines 51-53, col.3, '367), but lacks excess chocolate, removing excess chocolate, recycling chocolate, and back flushing the nozzle. Covert discloses molds are filled [with chocolate] by depositing machine, (lines 41-42, col.1, '696) Nozzle may enter mold substantially to the bottom of the mold cavity, (lines 6-10, col.2, '696) The suction is on when the nozzle meets the surface of the liquid in the mold cavity, (lines 1-5, col.2, '696) The chocolate removed by suction to the tempering kettle . . . supply the depositing machine, (lines 28-30, col.2, '696), but lacks back flushing of the nozzle, Ohlin ('212) discloses: a device for cleaning the exterior of an elongated body and removing loosely adhering matter, (lines 27-29, col. 1, '212) with a collar with a bore slightly larger in diameter than tube is positioned so that the portion of the tube is cleaned as it passes through bore, (abst. '212)Tubular probe which is mounted for movement up and down out of and into successive sample containers for withdrawal of the samples therein, (lines 43-45, col. '212)

12. Carter, Covert and Ohlin are analogous art, Carter and Covert, are involved in the manufacture of chocolate covered ice cream cones, Ohlin is concerned with a similar problem the removal of loosely adhering material and the cleaning the exterior of a probe that going from one container to another.

13. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the chocolate coated ice cream cone machine of Carter, to incorporate the use of excess chocolate, and the suction removal of the chocolate of Covert, and the cleaning of the probe of Ohlin, in order to make a chocolate coated ice cream cone that does not turn soggy with the addition of ice cream, and result in a action may be relatively rapid and continuous, . . . high rate of production, and a uniform, high grade product, (lines 13-15, col.3, '696) Although Covert does not explicitly state that the chocolate recovered from the molds by the nozzle is recycled, he does state that it goes to the tempering kettle and thence to the depositing machines. (lines 28-30, col.2, '696) It would be obvious to one of ordinary skill in the art that the chocolate recovered in Covert was being recycled for further use. One of ordinary skill in the art would find it obvious that the nozzle having suction applied and the exterior washing of Ohlin would serve the same purpose in a similar manner as the instant application.

14. Regarding claim 25, Carter, Covert and Ohlin disclose the claimed invention, as discussed above; including the suction through the nozzle would suck particulate matter into the kettle.

Art Unit: 1794

15. Regarding claim 26, Carter, Covert and Ohlin disclose the claimed invention, as discussed above, including that the nozzle of Ohlin fits snugly in a sleeve, (Fig. 2 & 3, '212) such that any particulate matter that adheres to the nozzle will be removed during the retraction into the body.

16. Regarding claim 27, Carter, Covert and Ohlin disclose the claimed invention, as discussed above, including the nozzle of Ohlin has an opening in the bottom of the nozzle, and the nozzle is retracted into a chamber with an inlet for the admission of gaseous or liquid purges. (Fig.2 & 3, '212)

17. Regarding claim 28, Carter, Covert and Ohlin disclose the claimed invention, as discussed above, including the container is a conventional ice cream cone, (line 31, col. 1, '367)

18. Regarding claim 29, Carter, Covert and Ohlin disclose the claimed invention, as discussed above, including the coating is chocolate. (lines 37-38, col.4, '367)

19. Regarding claim 30, Carter, Covert and Ohlin disclose the claimed invention, as discussed above, including food product is ice cream. (lines 41-43, col.1, '367)

Response to Amendment

20. The applicant amended claims 24 and 44, but amendments did not remove the indefiniteness, and thus, the 35 USC § 112 rejections thereunto are NOT withdrawn.

Response to Arguments

21. Applicant's arguments, see Paragraph 3, pg 10, filed 7/17/2009, with respect to Carhuff being improper prior art, due being subject to a common assignee, have been fully considered and are persuasive. The 103 rejection of claims 24-30 and 44 has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of based upon Carter, in view of Covert and further in view of Ohlin

22. The remainder of the applicant's arguments being directed to the use of Carhuff are moot, except for the following:

23. First: The applicant is making a distinction between spraying the interior of the cone with an excess amount of chocolate coating sufficient to form a continuous layer, and removing the excess, and the prior art filling the mold with chocolate and removing the excess, leaving a layer of chocolate on the interior of the mold. It would have been obvious to one of ordinary skill in the art that the two methods accomplish similar goals with similar methods. The interior of the mold or the cone is completely coated with chocolate and there is a hollow interior ready to accept a filling.

24. Second the applicant postulates that one of ordinary skill in the art would find that the chocolate cone became soggy if filled with chocolate, but nowhere in the

Art Unit: 1794

specification nor the claims does he allude to an upper limit on the amount of chocolate, on the contrary, the applicant repeatedly states that an "excess quantity" of chocolate is used.

25. Third the applicant states the prior art is not analogous, that the fields are too disparate to combine, In response to applicant's argument that Carter and Covert are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Carter and Covert are both directed to the preparation of chocolate containing comestibles for human consumption, and thus are from the same field of endeavor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY W. ANDERSON whose telephone number is (571)270-3734. The examiner can normally be reached on 7 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. SAYALA/
Primary Examiner, Art Unit 1794

jwa

Notice of References Cited	Application/Control No. 10/599,311	Applicant(s)/Patent Under Reexamination DAOUSE ET AL.	
	Examiner JERRY W. ANDERSON	Art Unit 1794	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2,670,696 A	03-1954	COVERT CLAUDE J et al.	425/217
*	B	US-3,171,367 A	03-1965	CARTER PAUL H et al.	426/282
*	C	US-3,552,212 A	01-1971	Ohlin, L.E.	73/864.22
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EXHIBIT B



UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,311	09/25/2006	Alain Bernard Daouse	3712036.00754	6771
29157	7590	05/25/2010		
K&L Gates LLP P.O. Box 1135 CHICAGO, IL 60690			EXAMINER ANDERSON, JERRY W	
			ART UNIT 1781	PAPER NUMBER
			NOTIFICATION DATE 05/25/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chicago.patents@klgates.com

Office Action Summary	Application No. 10/599,311	Applicant(s) DAOUSE ET AL.	
	Examiner JERRY W. ANDERSON	Art Unit 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24, 26-30 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24, 26-30 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner acknowledges the receipt of the Applicant's Amendment, mailed 2/19/2010. Claim 25 is cancelled; claims 24 & 44 are amended and claims 24, 26-30 & 44 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 24, 26-30 and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over Carter, P.H., et al., (3,171,367) in view of Covert, C.J., et al., (2,670,696) and further in view of Ohlin, E.L. (3,552,212)

Regarding claims 24 and 44, Carter discloses the claimed invention, including, the preparation of a chocolate lined ice cream cone, by spraying the interior of the cone

with chocolate, and filling the interior of the cone with ice cream, which hardens the chocolate layer, (lines 44-60, col.3, '367) but lacks removing excess chocolate, recycling chocolate, and removing particulates from the nozzle.

Covert discloses chilled molds are filled [with chocolate] by depositing machine, (lines 40-55, col.1, '696) allowing a solid layer of chocolate to form and removing the excess chocolate by suction, (lines 10-13, 50-55, col.1, '696) nozzle may enter mold substantially to the bottom of the mold cavity, (lines 6-10, col.2, '696) the suction is on when the nozzle meets the surface of the liquid in the mold cavity. (lines 1-5, col.2, '696) The chocolate removed by suction to the tempering kettle which supplies the depositing machine, (lines 25-30, col.2, '696) but lacks removing particulates from the nozzle

Ohlin ('212) discloses: a device for cleaning the exterior of an elongated body and removing loosely adhering matter, (lines 27-29, col. 1, '212) droplets of the sample may remain on the inner and outer surface of the pipette, (lines 50-52, col.1, '212) with a collar with a bore slightly larger in diameter than tube is positioned so that the portion of the tube is cleaned as it passes through bore, (abst. '212) tubular probe which is mounted for movement up and down out of and into successive sample containers for withdrawal of the samples therein. (lines 43-45, col. '212) Suction is applied to the annular space between the walls of the bore and the take-off tube to cause air or a wash-liquid to flow around the take-off tube and entrain any loosely adhering sample deposits on the outer surface of the take-off tube. (abst, '212)

Carter is involved in the preparation of a chocolate lining in an ice cream cone, by spraying the interior of the cone with chocolate, and is seeking to solve the problem

of protecting the cone material from becoming soggy by the subsequent addition of ice cream.

Covert is involved in the preparation of chocolate shells by pouring chocolate into a chilled mold, allowing the chocolate to form a solid layer next to the mold surface and removing the excess chocolate by use of suction.

Ohlin is using suction to collect a sample, and is seeking to solve the problem of material adhering to the outside of the pipette, by using suction to cause an a gaseous flow, air, to flow across, around and along the pipette tip, removing any adhering material, while the inside of the pipette is cleaned by a liquid and/or a gaseous flow created by suction.

Carter and Covert are seeking to solve the same problem, the formation of thin layers of chocolate, and Covert is removing the excess chocolate from a mold using a suction nozzle,

Ohlin is concerned with a problem concerning the removal of loosely adhering material and the cleaning the exterior of a probe that going from one container to another.

The applicant is blowing air or a gas into the pipette tip to dislodge particulate matter and to carry said particulate matter in the same direction as the previously aspirated chocolate.

Lab technicians routinely use blowing and/or suction creating a gaseous flow to clear adhering matter, whether particulate or liquid, from the interior and the exterior of a pipette.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the chocolate coated ice cream cone machine of Carter, to incorporate the use of excess chocolate and the suction removal of the excess chocolate of Covert, and the cleaning of the pipette of Ohlin, in order to make a chocolate coated ice cream cone that does not turn soggy with the addition of ice cream, and result in a action may be relatively rapid and continuous, with high rate of production, and a uniform, high grade product, (lines 13-15, col.3, '696) Although Covert does not explicitly state that the chocolate recovered from the molds by the nozzle is recycled, he does state that it goes to the tempering kettle and thence to the depositing machines. (lines 28-30, col.2, '696) It would be obvious to one of ordinary skill in the art that the chocolate recovered in Covert was being recycled for further use.

One of ordinary skill in the art would find it obvious that the nozzle having suction applied and the exterior gaseous air flow (due to suction) of Ohlin would serve the same purpose in a similar manner as the instant application.

Suction and blowing are alternate embodiments that result in similar effects, namely, both processes would result in the movement of material, and a gaseous flow passing through the pipette, either expelling the adhering material or withdrawing the material into the pipette for further disposal would produce the same result and such would have been obvious to the practitioner.

One of ordinary skill in the art would have found it obvious that the modification of the chocolate removal nozzle of Covert with the pipette cleaning collar of Ohlin, would have the suction through the nozzle causing a gaseous flow from the nozzle to the

Art Unit: 1781

chocolate tempering kettle, and the gaseous (air) flow across, around and along the nozzle due to the suction going to line 29 of the collar of Ohlin, would result in any matter being dislodged from the exterior of the nozzle, being entrained in the gaseous (air) flow going into the nozzle, and the matter would then be carried into the pipette and in the same direction as the chocolate previously aspirated.

Regarding claim 26, Carter, Covert, and Ohlin disclose the claimed invention, as discussed above, including that the nozzle of Ohlin fits snugly in a sleeve, (Fig. 2 & 3, '212) such that any particulate matter that adheres to the nozzle will be removed during the retraction into the body.

Regarding claim 27, Carter, Covert, and Ohlin disclose the claimed invention, as discussed above, including the nozzle of Ohlin has an opening in the bottom of the nozzle, and the nozzle is retracted into a chamber with an inlet for the admission of gaseous or liquid purges. (Fig.2 & 3, '212)

Regarding claim 28, Carter, Covert, and Ohlin disclose the claimed invention, as discussed above, including the container is a conventional ice cream cone, (line 31, col. 1, '367)

Regarding claim 29, Carter, Covert, and Ohlin disclose the claimed invention, as discussed above, including the coating is chocolate. (lines 37-38, col.4, '367)

Regarding claim 30, Carter, Covert, and Ohlin disclose the claimed invention, as discussed above, including the food product is ice cream. (lines 41-43, col.1, '367)

Response to Amendment

The applicant having cancelled claim 25, the 35 USC § 103 rejection thereunto is withdrawn.

The applicant having amended claims 24 and 44, the 35 USC § 112 2nd rejections thereunto is withdrawn

Response to Arguments

Applicant's arguments, see ¶ 3, pg 8, remarks to ¶ 4, pg 10, filed 2/19/2010, with respect to the § 112 2nd rejection of claims 24 and 44, having been fully considered in light of the amendments of claims 24 and 44, also filed 2/19/2010, are persuasive. The 35 USC § 112 2nd rejection of claims 24 and 44 has been withdrawn.

Applicant's arguments filed 2/19/2010 have been fully considered but they are not persuasive.

Examiner has expanded upon the rationale for the combination of the prior art, see above, and submits the prior art does disclose the elements of claims 24 and 44.

The applicant states that the cone would soften, if the cone was completely filled with chocolate. (¶ 1, pg 12, Applicant's remarks) Covert teaches that the molds are chilled so that the chocolate congeals on the surface of the mold, which presumably would be the case of the cones filled by Carter. Further, Carter teaches that previously to his method of spraying and immediately filling with cold ice cream to solidify the chocolate, that cones are completely immersed in chocolate to create a chocolate coating of the inside and outside of the cone, and that the hardening of the chocolate layer took some time, and rendered the cones less crispy. (lines 36-52, col.1, '367)

Note that this was not an immediate process but took some time. However, the removal of chocolate under Covert done in an automated process, and the time the chocolate resides in the chilled mold, although not stated, is described as relatively rapid and continuous. (lines 13-14, col. 3, '696)

The applicant points to Carter stating that a large quantity of chocolate was not necessary, (¶ 2, pg 13, applicant's remarks) and concludes that there would be no reason to combine Carter and Covert. However, examiner submits that Carter is referring to the prior art's coating of both the outside and inside of the cone. (lines 7-17, col.2, '367) The next statement which contains the quoted statement begins "further saving" and thus is further comparing Carter's improvements to the prior art.

Further, Carter is stating that since the time between the application of the chocolate and the addition of the ice cream is minimal, this prevents excessive adsorption of the chocolate by the cone material.

As to the motivation to combine, examiner directs the applicant to the expanded rationale above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP

Art Unit: 1781

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY W. ANDERSON whose telephone number is (571)270-3734. The examiner can normally be reached on 7 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. SAYALA/
Primary Examiner, Art Unit 1781

Jwa

EXHIBIT C

March 2, 1965

P. H. CARTER ET AL

3,171,367

MANUFACTURE OF NOVELTY ICE CREAM PRODUCTS

Filed Nov. 2, 1962

4 Sheets-Sheet 1

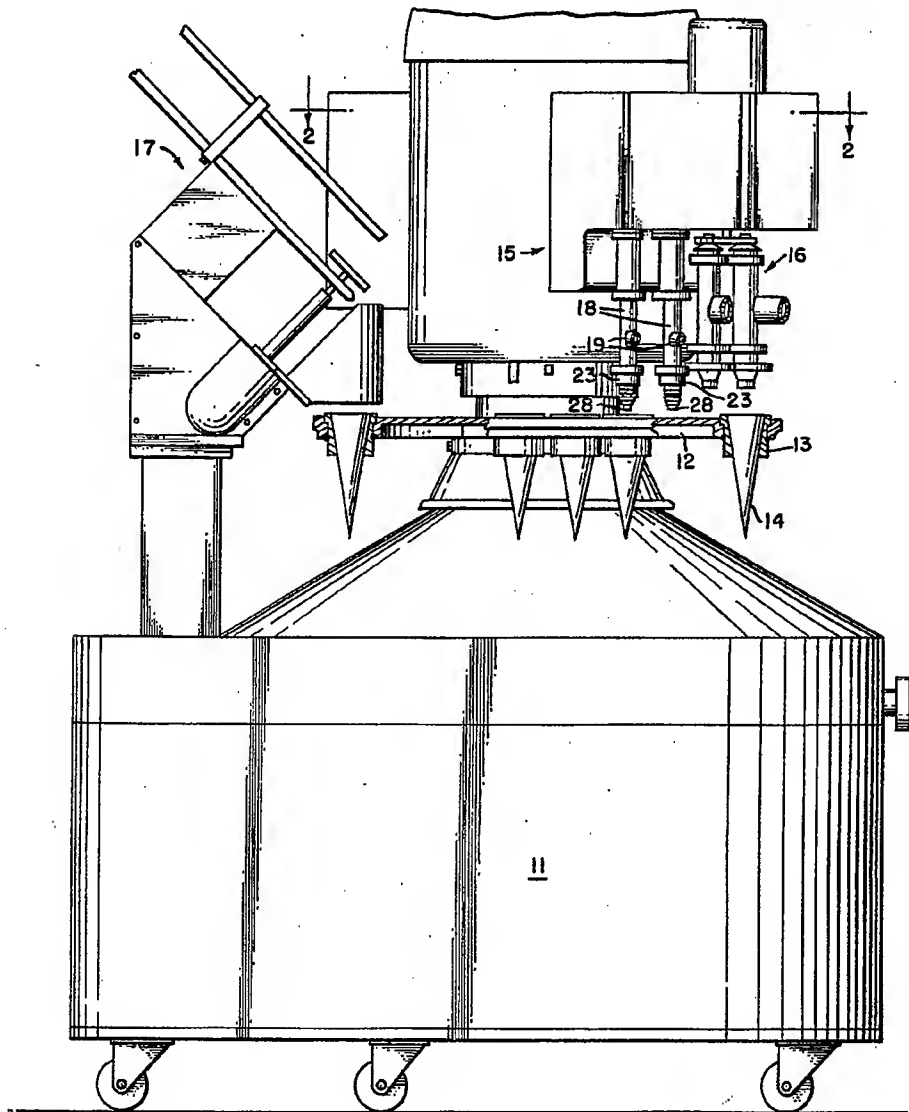


FIG. 1.

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March 2, 1965

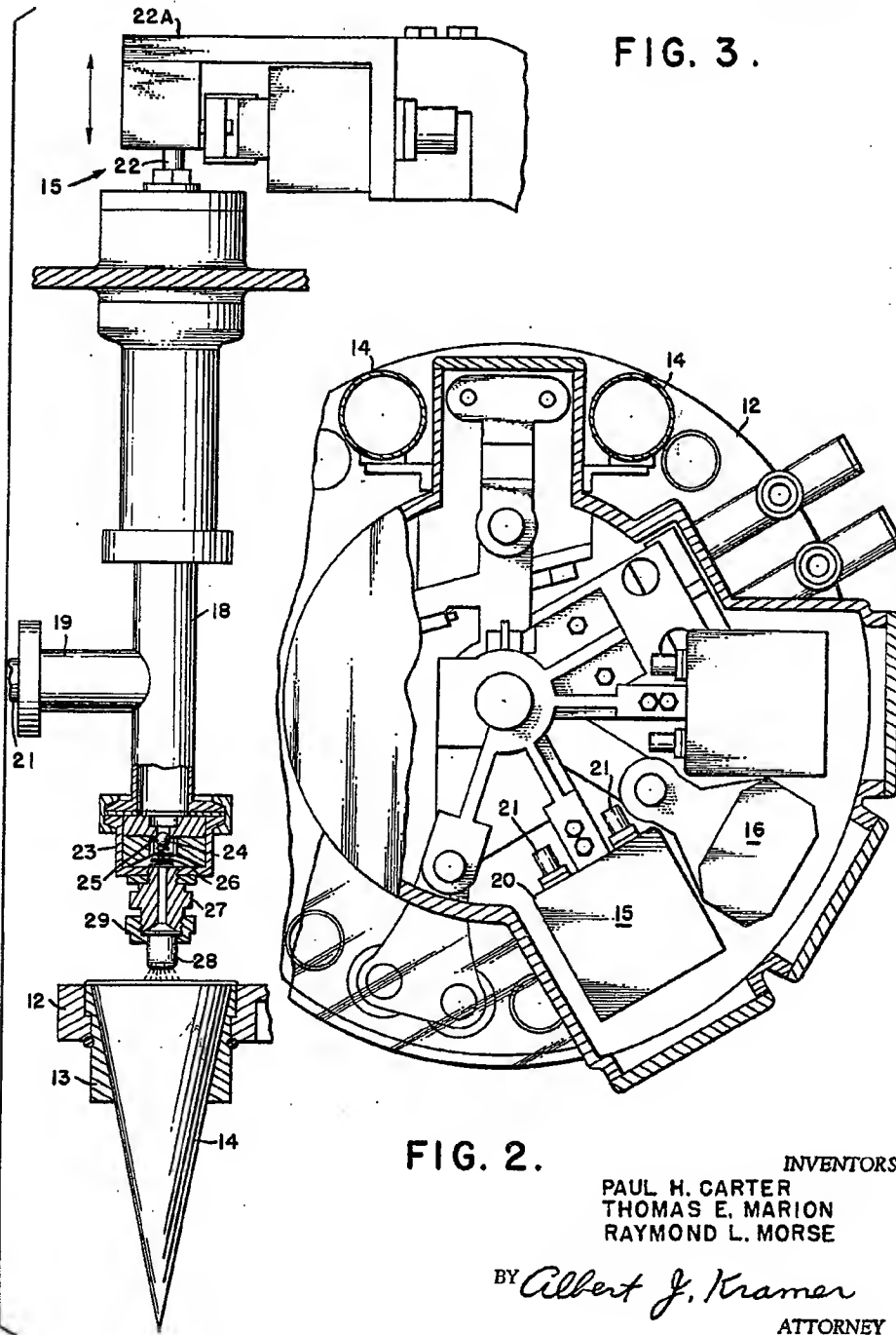
P. H. CARTER ET AL

3,171,367

MANUFACTURE OF NOVELTY ICE CREAM PRODUCTS

Filed Nov. 2, 1962

4 Sheets-Sheet 2



March 2, 1965

P. H. CARTER ET AL

3,171,367

MANUFACTURE OF NOVELTY ICE CREAM PRODUCTS

Filed Nov. 2, 1962

FIG. 4.

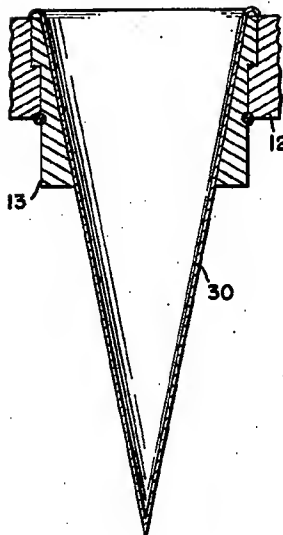
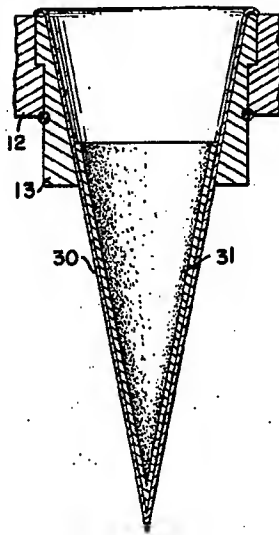


FIG. 5.



4 Sheets-Sheet 3

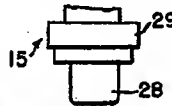


FIG. 6.

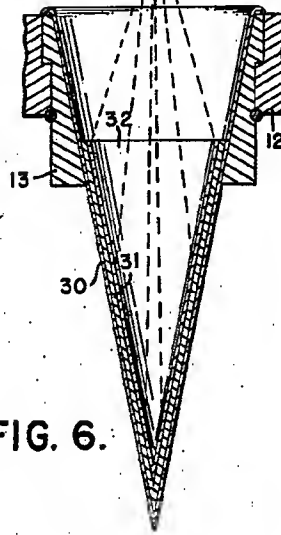


FIG. 7.

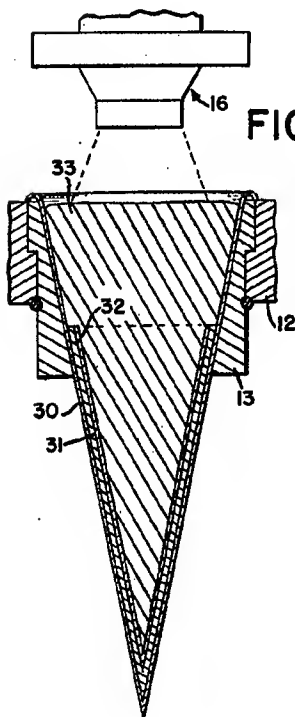


FIG. 8.

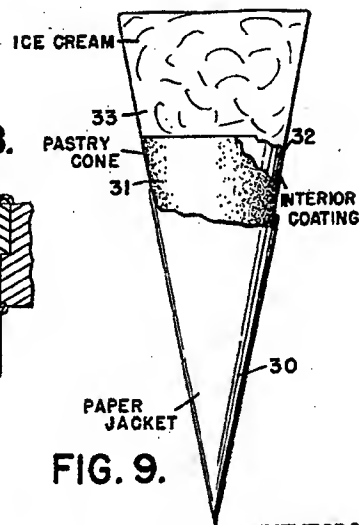
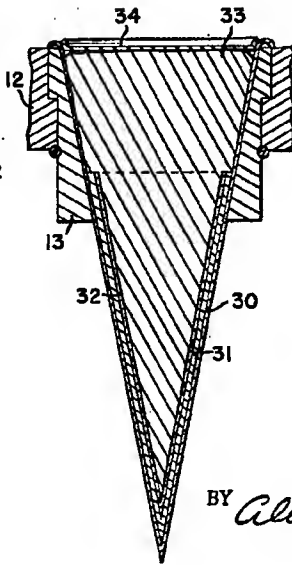


FIG. 9.

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MANUFACTURE OF NOVELTY ICE CREAM PRODUCTS

Filed Nov. 2, 1962

4 Sheets-Sheet 4

FIG. 10.

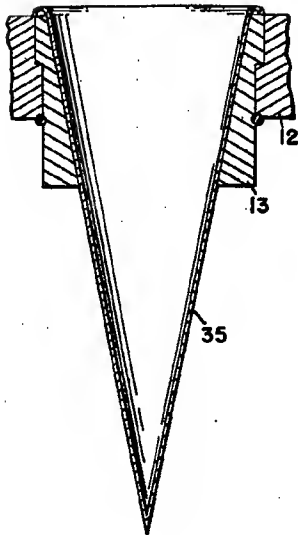


FIG. 11.

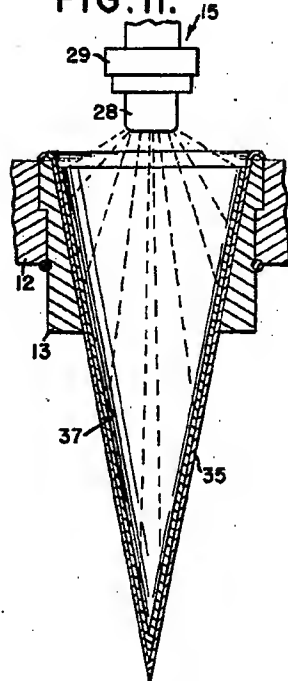


FIG. 12.

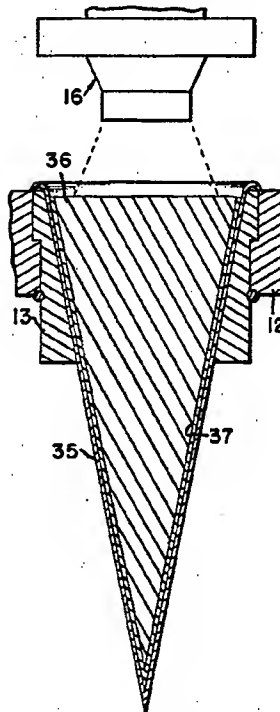


FIG. 13.

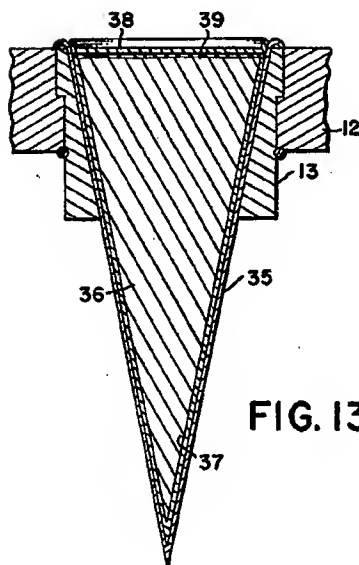
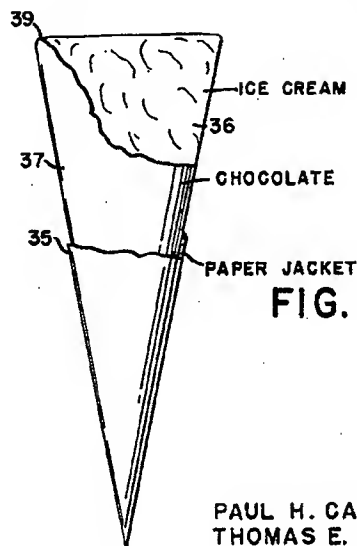


FIG. 14.



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3,171,367

MANUFACTURE OF NOVELTY ICE CREAM PRODUCTS

Paul H. Carter, Raymond L. Morse, and Thomas E. Marion, all of 1200 S. Eutaw St., Baltimore, Md.
Filed Nov. 2, 1962, Ser. No. 235,081
1 Claim. (Cl. 107-54)

This is a continuation-in-part of our copending application for patent Ser. No. 815,883, filed May 26, 1959, now Patent No. 3,070,933.

The invention of this application relates to the manufacture of novelty ice cream products and it is more particularly concerned with such products which combine ice cream with other confectionary materials such as chocolate, nuts, syrups, ice cream cones, etc., wrapped in paper containers or jackets.

In our said copending application for patent Ser. No. 815,883, we have disclosed a machine for manufacturing such novelty ice cream products and by means of which paper jacketed ice cream cones are supported on a horizontal loading wheel that is rotated in relation to a series of confectionary dispensing units including chocolate, ice cream, ground nuts, etc. There is also disclosed in said application the method of providing a special type of novelty ice cream product by first placing in the ice cream cones a liquefied material before introducing the ice cream. As a result of this sequence of operations the liquefied material becomes hardened under the chilling effect of the ice cream.

Conventional ice cream cones, which are of a porous pastry product, before being placed in the paper jackets are coated with a liquefied chocolate which hardens upon cooling. The cooling is usually at room temperatures. This is conventionally accomplished by immersion of the cones in a bath of the liquid chocolate that is maintained in a liquid state which involves the steps of elevation of the temperature above the hardening point, then removal of and cooling of the cones to harden the chocolate after which the thus coated cones are placed in the paper jackets and fed to the filling machine. The coating of the cones prevents them from becoming soggy when the ice cream is deposited therein by the filling machine. The paper jackets keep the chocolate coating from contacting the hands and clothing of the consumer as well as the operator who feeds them to the filling machine. The hardening of the coating at room temperature requires a considerable period of time that tends to permit the coating to absorb into the cones and which, if it becomes sufficiently advanced, adversely affects the physical characteristics of the cones, such as crispness, for subsequent handling and consumption. Ideally, it is preferred that the liquid not become completely absorbed but only partially so to an extent just under the surface of the cones.

By operation of the filling machine in accordance with the teachings in said copending application it is possible to eliminate entirely the operation of coating the cones before placing them in the jackets and to achieve a product greatly superior in quality relative to that which re-

2

sults from the conventional method of providing these confectionary products. By depositing the coating material on the interior of the cones while they are on the filling machine and immediately before the ice cream is deposited therein, the ice cream chills and hardens the coating immediately, thereby preventing excessive absorption and protecting the cones from the ice cream. This procedure also has the advantage that the coating need be applied only to the interior of the cones which results in a saving of coating material, since the coating on the exterior by the conventional dipping methods is not only redundant and unnecessary for the purpose of protecting the cones from the ice cream but is actually undesirable because, among other things, it is subject to being contacted by the hands of the consumer as well as the machine operator and, hence, creates a problem of cleanliness. Further saving of the chocolate coating material is effected because it is not necessary to provide a large quantity in accordance with the method of the present invention since sufficient time is not permitted for the absorption of an unnecessary and excessive amount of chocolate into the pores of the cones.

The presence of the coating, in accordance with the conventional method, on the outside of the cones also presents the problem of oiling off, the oil being absorbed by the paper jackets from the coating material to produce an unsightly article as well as one which is likely to soil the fingers of the consumer while being held in and receiving warmth from the hands.

The chocolate coating in accordance with this invention may also be applied to the interior of a container without a pastry cone therein and when so applied forms a hard coating directly on the ice cream, whereupon the container may be peeled off leaving a chocolate coated ice cream bar.

These and still further objects, advantages and features of the invention will be more fully understood from the accompanying drawing in conjunction with the following description.

In the drawing:

FIG. 1 is a side elevational view of a filling machine in accordance with this invention.

FIG. 2 is a plan sectional view along the line 2-2 of FIG. 1.

FIG. 3 is a fragmentary view of a portion of the machine showing in elevation and partly broken away the chocolate dispensing unit that precedes the ice cream dispensing unit.

FIGS. 4, 5, 6, 7, 8 and 9 are a series of views diagrammatically illustrating the steps in the manufacture of a form of confectionary product in accordance with this invention.

FIGS. 10, 11, 12, 13 and 14 are a series of views diagrammatically illustrating the steps in the manufacture of another form of confectionary material in accordance with this invention.

Referring with more particularity to the drawing in which like numerals designate like parts, the filling machine illustrated in FIGS. 1 to 3 is essentially the same as that described in detail in said copending application Ser.

No. 815,883 to which reference is here made for a complete description thereof. For the purpose of this application, the machine may be regarded as comprising essentially a base structure 11, a horizontal loading wheel 12 having adapter members 13 for receiving receptacles, such as conical receptacles 14, and dispensing units for various items, such as the dispensing unit 15 for chocolate coated material (liquefied by heat), ice cream dispensing unit 16, and others which may be desired. The machine also includes a unit 17 for feeding the receptacles to the loading wheel, means (not shown) for intermittently rotating the wheel in synchronization with the dispensing units, and means for applying a sealed lid to the container after the confectionery material is deposited therein, all of which is disclosed in said copending application.

The dispensing units are each designed to provide twin outlets so that the deposit in the receptacles can be effected two at a time at each station. The entire machine is adapted to operate in this twin capacity for the purpose of increasing the rate of production.

The chocolate dispensing units 15 each comprise a vertical cylinder 18 which contains a reciprocating plunger (not shown) above an outlet pipe 19, said outlet pipe containing a check valve (not shown) and leading from a heated reservoir 20, through pipe 21. The plunger is actuated by a powered reciprocating arm 22A through a pin 22. The action of the plunger in the cylinder 18 in conjunction with the check valve, draws the liquefied chocolate into the cylinder from the pipe 19 on the upward stroke of the piston and on the downward stroke forces it through the bottom of the cylinder 18. The bottom of the cylinder is connected to a housing 23 containing a ball check valve that includes a ball 24, a ball seat 25 and ball spring 26 which urges the ball to closed position against the seat. The pressure of the spring is overcome by the liquid pressure on the down stroke of the piston in the cylinder 18. The bottom of the valve housing 23 has an outlet opening at its bottom to which a nipple 27 is removably attached by threads. A spray nozzle 28 is removably attached by a flange coupler 29 to the bottom of the nipple.

Referring with more particularity to FIGS. 4 to 9 which diagrammatically illustrates a series of steps in the manufacture of a form of confectionery product, a receptacle, such as a conical jacket 30 of paper or other suitable material into which there is placed an empty pastry cone 31 is disposed on the loading wheel and carried by it to the various dispensing units of the machine intermittently. The first dispensing unit encountered is the chocolate coating dispenser 15 which is shown in FIG. 6. The spray from this dispenser covers the inside surface of the pastry cone with a layer of chocolate 32 the outside surface of the pastry cone being protected against the spray by the jacket 30. The next operation as shown in FIG. 7 results in the ice cream dispenser depositing a volume of chilled fluid ice cream 33 directly into the pastry cone 31 and in the space of the jacket 30 above the rim of the cone. This application of the cold material on the applied chocolate layer results in the chocolate becoming quickly hardened, usually in a fraction of a second. Between the time the chocolate is applied to the cone and the ice cream is deposited therein, a portion of the chocolate is absorbed into the walls of the cone but the application of the ice cream in point of time is such that the entire amount of the chocolate does not absorb, whereby the effect of the ice cream is to harden the chocolate at the surface of the cone and in the pores of the cone just under the surface. In other words, this operation is timed so as to harden the chocolate coating before it absorbs into the pores of the cone in an excessive amount to adversely affect the physical characteristics of the cone for the purpose for which it is intended. The hardening of the chocolate acts as a barrier to the penetration of the ice cream through the walls of the pastry cup. In actual practice good results have been obtained with

ice cream at a temperature of about 15° to 25° F., usually 20° F., supplying the coating material at a temperature in the range of about 90° to 100° F., the hardening point of the coating material being about 75° to 80° F., usually about 78° F.

A lid 34 is then applied to the upper open end of the paper jacket as shown in FIG. 8 at a subsequent station of the machine (not shown), after which the thus completed product is removed from the machine and stored in a chilling room to harden the ice cream before being shipped for sale to the consuming public. These products are sold to the public and are usually consumed by progressively tearing the jacket 30 from the top to expose the product on the inside (see FIG. 9). As thus exposed the exterior surface of the pastry cone is substantially clear of chocolate coating so that contact thereof by the consumer's hands or clothing will not result in soiling, and yet the pastry cone is protected by the interior chocolate coating.

Another form of confectionary product that can be made with the machine is illustrated in FIGS. 10 to 14. In this case, no pastry cone is used. Instead a receptacle 35 alone of paper or other suitable material is used and the chocolate is sprayed directly on the interior surface of the receptacle. The ice cream 36 is then inserted (see FIG. 12) which causes the chocolate coating 37 to harden. The lid 38 is then applied (FIG. 13) to complete the product which is then stored in a chilling room to harden the ice cream. When the receptacle 35 is progressively removed from the top to expose the product the chocolate coating 37 adheres to the ice cream (see FIG. 14) and, in effect, a chocolate coated bar is thus provided similar to the well known "Eskimo Pies." A complete coating of chocolate may be provided for the ice cream by adding additional chocolate 39 to the top of the ice cream before putting the lid 38 in place.

It is to be understood that coatings other than chocolate may be used, the invention having been described with reference to chocolate for illustrative purposes only and not for purposes of limitation. Such other coating materials as caramel, butterscotch, and others are well known in the art. Also, various toppings may be added to either form of the product, such as various syrups, crushed nuts, shredded coconut, etc. Also, ices, sherbets, milk ice and other ice desserts may be used instead of or in conjunction with ice cream, the ice cream being referred to in the description above and the claims hereinafter for illustrative purposes only and not for purposes of limitation. Also, jackets and containers other than paper may be used and are deemed to be equivalent of paper such as thin-wall plastic material, polystyrene, polyethylene or other paper substitutes well known in the art. Also, glassware, parchment, metallic foil and other non-porous paper substitute material, as well as plastic coated paper, may be used.

Having thus described our invention, we claim:

The method of manufacturing a novelty ice cream product comprising supporting an open end conical paper jacket in a vertical position with its open end at the top; placing in the paper jacket while being supported in said vertical position a conical porous edible pastry container of a size and shape conforming to a portion of the paper jacket below a marginal annular area adjacent the top; spraying downwardly onto the pastry cone from a position directly above the supported jacket an edible liquid coating material, whereby the inner surface of the pastry container is exposed to the spray while the outer surface thereof is shielded from the spray by the presence of the jacket, said material having a hardening point and being in a liquefied state at a temperature above its hardening point; placing a quantity of fluid ice cream in the pastry container and jacket in direct contact with the coating material after the material absorbs partially into the walls of the pastry container, before it absorbs completely into the walls thereof, and while it is still in a fluid state; said

ice cream being at a temperature below the hardening point of the material the quantity of said fluid ice cream being sufficient to fill the space in the paper jacket between the pastry container and an annular strip adjacent the upper edge of the jacket to lie against the inner surface of and conform to the shape of the paper jacket adjacent said space; then completely closing the upper open end of the paper jacket with a frusto-conically flanged circular disc in continuous contact with said annular strip while the jacket is in the vertical position to shield the contents thereof from the ambient air and subjecting the resulting product to a temperature below the freezing point of the ice cream therein.

5

10

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ROBERT E. PULFREY, *Primary Examiner.*J. D. BEIN, *Examiner.*

EXHIBIT D

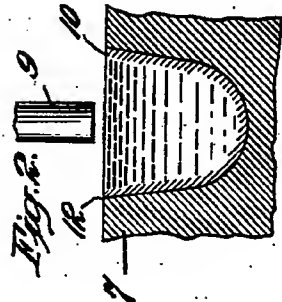
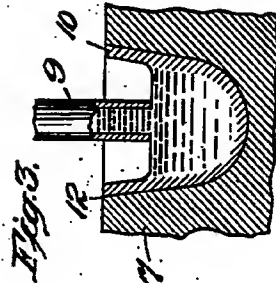
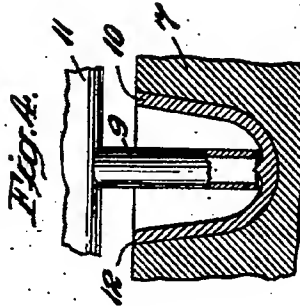
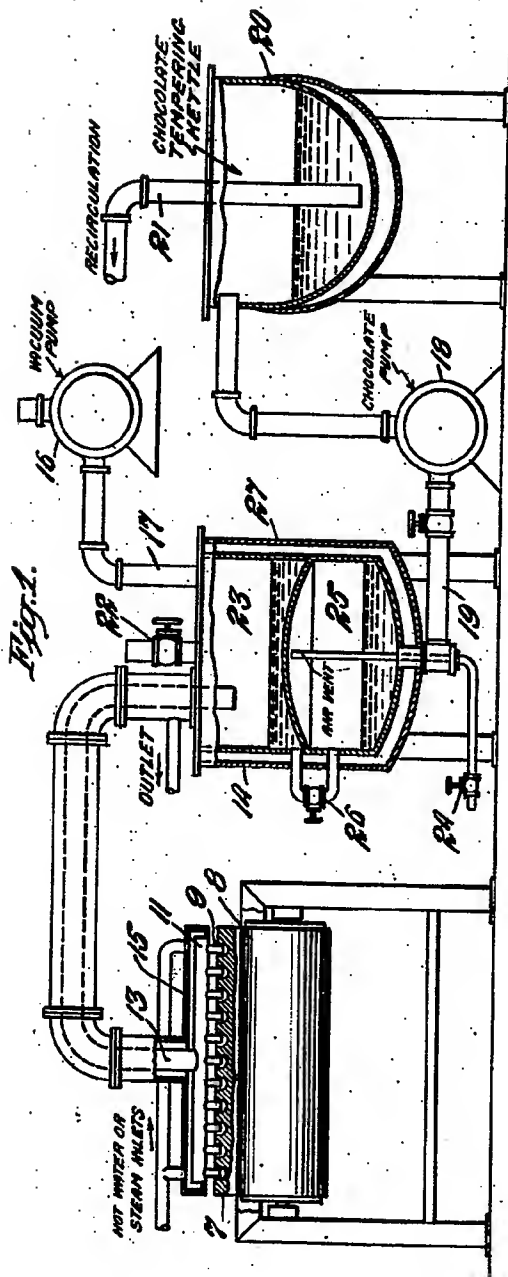
March 2, 1954

C. J. COVERT ET AL

2,670,696

VACUUM SYSTEM OF MANUFACTURING CHOCOLATE SHELLS

Filed Feb. 2, 1951



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UNITED STATES PATENT OFFICE

2,670,696

VACUUM SYSTEM OF MANUFACTURING
CHOCOLATE SHELLS

Claude J. Covert, Glen Rock, and Joseph L. Raffetto, Jr., Ramsey, N. J., assignors to Racine Confectioners' Machinery Co., Racine, Wis., a corporation of Wisconsin

Application February 2, 1951, Serial No. 209,068

1 Claim. (Cl. 107-8)

1

The invention herein disclosed relates to the manufacture of chocolate shells for filled candies. Objects of the invention are to simplify such manufacture and to eliminate objectionable features experienced under present procedures.

Particularly it is a purpose of the invention to eliminate the need for inverting the molds to pour off excess chocolate and then to scrape the mold faces clear of spilled chocolate.

These objects are accomplished in the present invention through utilization of suction to lift and carry away excess chocolate from the mold cavities.

Other desirable objects attained by this system and the novel features of invention involved therein are set forth or will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates a present commercial embodiment of the invention but structure and arrangement may be modified and changed as regards this illustration, all within the true intent and broad scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a partly diagrammatic and sectional view of one form of apparatus for carrying out the invention;

Fig. 2 is an enlarged broken sectional showing a filled mold cavity, with the chocolate shell partly congealed and the mouth of the companion suction nozzle about to meet the surface of the liquid chocolate in the center of the mold cavity.

Figs. 3 and 4 are similar views illustrating successive stages of entry of a suction nozzle in the body of chocolate in the mold cavity, the first of these views showing the upper portion of the shell relieved of liquid chocolate and the second showing the nozzle at the lowest point and the shell practically emptied of liquid chocolate.

In the embodiment of the invention illustrated in Fig. 1, multiple cavity molds 7, which have been previously filled in a depositing machine, are carried by a conveyor 8 into position beneath suction nozzles 9 which, either by lifting of the mold or lowering of the nozzles, are caused to enter the mold cavities.

For mechanical reasons it may be simplest to lift the molds to the nozzles, with results approximately as illustrated in Figs. 2, 3 and 4.

The molds may be chilled or tempered so that the chocolate deposited therein in plastic or liquid state will congeal against the mold wall to initiate a shell, approximately as indicated at 10 in Fig. 2.

2

The suction is on when the nozzle meets the surface of the liquid in the mold cavity so that, as shown in Fig. 3, the liquid is lifted without spilling or other disturbance, leaving the shell in place against the mold wall.

Fig. 4 shows how the nozzle may enter the mold substantially to the bottom of the mold cavity, separated from the mold bottom a distance approximately equal to the desired thickness of the wall of the shell.

This procedure effects a quick, splash-free emptying of the shell, leaving the latter practically dry and free of liquid chocolate, ready to receive the filling material and to be closed, according to usual or possible special filling and closing operations.

The suction nozzles 9 are shown as carried by a suction manifold 11 spaced to register with the cavities 12 in the mold.

The suction pipe 13 extending from the manifold to the suction tank 14 may be suitably steam or water-jacketed, as indicated at 15, to keep the chocolate sufficiently liquid for flow purposes.

A vacuum pump is indicated at 16, suitably connected at 17 with the vacuum tank 14, and a chocolate pump is shown at 18 with a connection at 19 for carrying off the chocolate removed by suction, to the tempering kettle 20 which, through line 21, may supply the depositing machine or machines.

The vacuum tank 14 is shown as having a controllable air vent 22 for the upper chamber 23 and a controllable air vent 24 for the lower chamber 25. An external valved by-pass 26 is shown connecting the upper and lower chambers to transfer chocolate collecting in the upper chamber to the lower chamber, from whence it is removed by the chocolate pump. This tank, like other portions of the apparatus, may be suitably steam or water-jacketed as at 27 to keep the chocolate in proper fluid condition.

The air vent valves at 22 and 24 for the upper and lower chambers 23 and 25, and the valve in the by-pass 26 between these chambers may be regulated as required to enable proper action of the vacuum pump 18, separation and removal of air from the upper chamber 23 and flow of the chocolate from the upper chamber down into the lower chamber and to the chocolate pump 18.

The wall thickness, strength and other characteristics of the shells may be governed by control of mold temperature, time and other related factors, including suction, volume and pressure conditions.

3

With suction on as the nozzles approach the mold cavities, the liquid, free of the congealing wall forming layer, will be sucked up and withdrawn, this action continuing progressively as the nozzles lower down toward the bottom of the mold cavities. In this manner free liquid is drawn toward the center of the mold cavity, away from the surrounding face surface of the mold, to keep the top surface clear and free of any excess material.

With the elimination of any need for turning the molds over or scraping them, the action may be relatively rapid and continuous, resulting in a high rate of production and a uniform, high grade product.

With the savings in time accomplished by the more nearly continuous operation, expenses and labor costs are reduced.

Details of the conveyor for carrying the molds to the suction nozzles and the means for lifting the molds up to and over the mouths of the nozzles are not shown, since such constructions may vary within wide limits. Actually, this may be a chain conveyor construction with plungers positioned and timed to lift and lower the molds at the station where the suction nozzles are located.

What is claimed is:

Apparatus for the manufacture of chocolate shells comprising in combination with open top, multiple cavity molds conditioned to congeal molten chocolate deposited therein, into chocolate shells containing liquid chocolate, a stationary suction manifold, suction nozzles dependent

4

from said manifold in position to register with the mold cavities, conveyor means for carrying said molds to the suction manifold and for effecting relative lifting of the mold cavities up over the ends of the nozzles, a stationary suction tank, a vacuum pump connected with said suction tank, a suction pipe extending from the suction manifold to said suction tank, heat supplying means connected with said suction manifold, suction pipe and suction tank for keeping the chocolate extracted by the nozzles in liquid state, and means in the suction tank for effecting separation of liquid chocolate from air withdrawn by the vacuum pump, including upper and lower chambers in said tank, a valved by-pass between said chambers, valved vents for said upper and lower chambers, said vacuum pump being connected with said upper chamber, and a chocolate removing pump connected with said lower chamber.

CLAUDE J. COVERT;
JOSEPH L. RAFFETTO, JR.

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EXHIBIT E

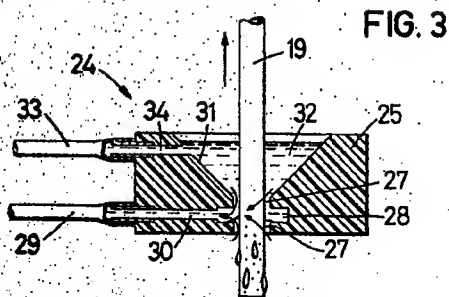
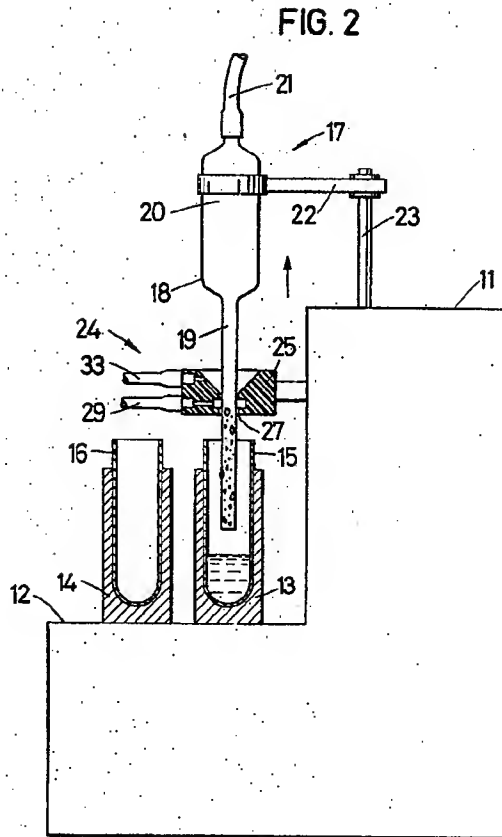
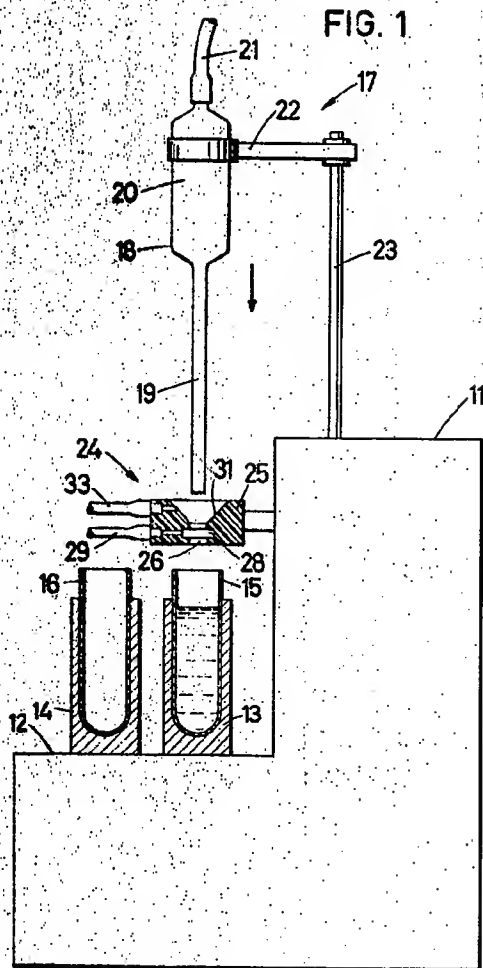
Jan. 5, 1971

L. E. ÖHLIN

3,552,212

DEVICE FOR CLEANING THE EXTERIOR OF AN ELONGATED BODY

Filed Dec. 3, 1968



INVENTOR
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1

3,552,212

DEVICE FOR CLEANING THE EXTERIOR OF AN ELONGATED BODY

Erik Lars Ohlin, Stockholmsvägen 46C,
Stocksund, Sweden

Filed Dec. 3, 1968, Ser. No. 780,787

Claims priority, application Sweden, Dec. 6, 1967,
16,779/67

Int. Cl. G01n 1/14; B08b 3/00

U.S. Cl. 73-423

4 Claims

ABSTRACT OF THE DISCLOSURE

A device for cleaning the outer surface of a take-off tube in a liquid analysis apparatus or other elongated bodies of uniform cross-section. A collar having a bore slightly larger in diameter than the take-off tube is positioned so that the portion of the take-off tube to be cleaned passes through the bore when it is moved up and down to aspirate samples. Suction is applied to the annular space between the walls of the bore and the take-off tube to cause air or a wash-liquid to flow around the take-off tube in the bore and entrain any loosely adhering sample deposits on the outer surface of the take-off tube.

This invention relates to a device for cleaning the exterior of an elongated body, and more particularly to a device for removing loosely adhering matter, such as liquid droplets, from the exterior of an elongated member of substantially uniform cross-section, such as a tube or a rod. The invention is particularly, although not exclusively, applicable to apparatus for automatic sequential processing or analysis of a series of liquid samples, and for convenience it will be described with reference to such application.

Many types of automated apparatus for sequential processing or analysis of a series of liquid samples supplied in succession from separate containers require that the samples be aspirated from their respective containers as a step of the processing or analysis procedure. The aspiration of the samples may be accomplished by means of a take-off device having a tubular probe which is mounted for movement up and down out of and into successive sample containers for withdrawal of the samples therein. Examples of take-off devices of this nature are described in, for example, U.S. Pats. Nos. 3,038,340; 3,193,358; and 3,251,229. A problem existing in connection with such take-off devices is that contamination of one sample by another may take place to some extent in that droplets of a preceding sample remain on the inner and outer surfaces of the tubular probe and are mixed with the next succeeding sample. The inner surface of the tubular probe may be freed for sample residues by passing a wash-liquid through the lumen of the probe, but efficient cleaning of the outer surface often presents a problem, even if the probe is made of a hydrophobic material.

Accordingly, it is a general object of the present invention to provide a device which is capable of effecting an efficient removal of loosely adhering matter from the exterior of an elongated member. A more particular object of the present invention is to provide a device which is capable of effecting an efficient removal of sample residues from the outer surface of a tubular probe of a liquid-sample take-off device.

The above and other objects, features and advantages of the invention will be apparent from the following description of a preferred embodiment illustrated in the accompanying drawing, in which:

FIG. 1 is a schematic elevational view, partly in section, of a liquid analysis apparatus incorporating a pre-

2

ferred embodiment of the cleaning device according to the invention.

FIG. 2 is a view similar to FIG. 1 and showing the cleaning device in operation.

FIG. 3 is an enlarged sectional view illustrating the operation of the cleaning device.

Referring now to the drawings and particularly to FIGS. 1 and 2, the liquid-sample analysis apparatus shown therein comprises a housing 11 providing a support surface 12 for first and second elongated sample carriers 13 and 14. Each sample carrier holds a series of sample tubes 15 and 16, only one sample tube being shown for each carrier. As an initial step of the analysis procedure a measured quantity of the liquid sample in each sample tube 15 of the first sample carrier 13 is to be transferred to a corresponding sample tube 16 of the second sample carrier 14 and mixed therein with a diluent or other conditioning liquid. To this end a transfer device 17 is provided which comprises a take-off probe 18 having a tubular lower portion 19 of uniform cross-section and an bulbous upper portion 20 connected to a suction source and a supply of conditioning liquid (not shown) through a flexible conduit 21. The take-off probe 18 is supported by an arm 22 which is rigidly secured to a post 23 on the housing 11. The post 23 is mounted for axial reciprocation and rotation by a mechanism not shown.

In operation of the apparatus the two sample carriers 13 and 14 are advanced step by step and in synchronism with each other along the support surface 12 in a direction perpendicular to the plane of the drawing to sequentially position the sample tubes 15 and 16 in a take-off position in vertical register with the take-off probe 18 as shown and a sample receiving position respectively. During each rest period of the sample carriers the post 23 is displaced downwardly from the position shown in FIG. 1 to insert the open lower end of the probe 18 into the sample in the sample tube 15 being in the take-off position. Suction is applied to the conduit 21 to cause the probe to aspirate a measured quantity of the sample, and the post 23 is then displaced upwardly to withdraw the probe (FIG. 2) from the sample tube 15 and rotated to position the probe in vertical register with the sample tube 16 being in the receiving position (in the position shown in FIG. 1 the arm 22 is at an angle to the plane of the drawing). In the receiving position the quantity of sample held in the probe 18 is ejected to the sample tube 16 and a measured quantity of conditioning liquid is supplied through the conduit 21 to condition the sample and wash out any sample residues from the interior of the probe.

When the probe 18 is withdrawn from the sample tube 15, droplets of the sample liquid may remain on the outer surface of the probe portion 19 as indicated in FIGS. 2 and 3, even if the probe is made of a hydrophobic material. If these sample residues are not removed, they will be carried over to and contaminate the sample in the next succeeding sample tube 16 when the probe is again moved down to aspirate a new sample so that the analysis result may be false. To eliminate such contamination between samples a cleaning device 24 is provided, and it is with this device the invention is concerned.

The cleaning device 24 comprises a collar 25 secured to the housing 11 between the probe 18 and the sample carrier 13 and having a vertical bore 26 therethrough which is in vertical register with the probe portion 19 when the probe 18 is in the take-off position. The diameter of the bore 26 is slightly larger than the diameter of the probe portion 19, and when the probe is moved up and down into and out of the sample tubes 15, the lower probe portion 19 passes through the bore and defines an annular space 27 with the walls of the bore. A suction

source (not shown) is connected to an intermediate enlarged portion 28 of the bore 26 through a conduit 29 and a passage 30 in the collar. The upper end of the bore 26 is in open communication with a recess 31 provided in the upper portion of the collar 25. A suitable wash-liquid 32 may be continuously or intermittently supplied to the recess 31 through a conduit 33 and a passage 34 in the collar.

The operation of the cleaning device 24 is as follows:

When the probe 18 is withdrawn from the sample tube 15 as shown in FIGS. 2 and 3, a film of wash-liquid is drawn from the recess 31 through the annular space 27 around the probe portion 19 to the suction conduit 29, and simultaneously air is drawn through the lower end of the annular space as indicated by arrows in FIG. 3. Any sample residues adhering to the outer surface of the probe portion 19 are efficiently entrained by the streams of wash-liquid and air and carried off through the suction conduit 29. If the wash-liquid is supplied continuously, the probe portion 19 is subjected to a similar treatment when the probe 18 is moved down to aspirate a new sample. If desired, the wash-liquid 32 may be supplied only during the upward movement of the probe 18 so that during the downward movement any remaining wash-liquid on the outer surface of the probe portion 19 is removed by air drawn through both ends of the annular space 27.

Depending on the nature of the matter to be removed, the wash-liquid may be dispensed with so that air is drawn through both ends of the annular space 27 during the downward as well as the upward movement of the probe 18. Generally, however, the supply of wash-liquid is preferred, since it ensures a more efficient cleaning.

The shape of the bore 26 and the relative dimensions of the bore 26 and the probe portion 19 to be cleaned are not very critical, but it will be understood that if the diameter of the bore is too large in relation to the diameter of the probe portion, the flow of wash-liquid and air may be inadequate to ensure an efficient removal of the sample residues, and if the diameter is too small, the sample residues may be wiped off by the lower peripheral edge of the bore and accumulate on the lower surface of the collar 25. Naturally, the suction applied to the bore has to be adequate to ensure that no wash-liquid drops from the bore 26 into the sample tubes 15 or to the support surface 12.

Although the invention has been described with particular reference to a sample transfer device in a liquid analysis apparatus, it will be understood that it is not limited to such application, which is given only by way of example. It will also be understood that the collar need not necessarily be stationary while the body to be cleaned is displaceable; the reverse is also possible. Thus, the invention may be embodied otherwise than herein specifically illustrated and described, and certain changes in the form and arrangement of parts and in the specific manner of practicing the invention may be made without departing from the underlying inventive idea within the scope of the appended claims.

What is claimed is:

1. A device for cleaning an elongated, vertically mounted member of substantially uniform cross-section, comprising a collar having a bore therethrough and adapted to encircle an axial portion of said member in radially spaced relation to define between the walls of said bore and said member an annular space, means for relatively displacing said collar and said member axially over a length of the latter to be cleaned while retaining said length and collar in radially spaced relation, and suction conduit means connected to said bore between the ends thereof to provide a fluid passageway around said portion of said member through said space to said suction conduit means, said annular space being sufficiently small so that air drawn therethrough by the reduced pressure from said suction conduit means will entrain any loosely adhering matter on the exterior of said length of said member and being sufficiently large to prevent wiping of such loosely adhering matter from the exterior of said member.

2. A device according to claim 1 and including means for supplying wash-liquid to said space.

3. A device according to claim 1 wherein said collar is provided with a recess communicating with the upper end of said bore and means are provided for supplying wash-liquid to said recess.

4. In combination with an apparatus having a tubular takeoff probe mounted for movement up and down into and out of a liquid-sample container for withdrawing liquid therefrom, a stationary collar having a bore therethrough and adapted to encircle an axial portion of said probe in radially spaced relation to define between the walls of said bore and said portion an annular space, means for displacing said probe through said bore over a length of said probe to be cleaned, means for supplying wash-liquid to said space, and suction conduit means connected to said bore between the ends thereof to cause said wash-liquid to flow around said probe portion through said space to said conduit means, said annular space being sufficiently small so that the reduced pressure from said suction conduit means will entrain any sample deposits on the exterior surface of said length of said probe.

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